

To: Curley, Michael[Curley.Michael@epa.gov]
From: Papadopoulos, George
Sent: Tue 3/15/2016 8:06:37 PM
Subject: FW: Questions about Pilgrim's Shut-Down

George Papadopoulos – USEPA

(617) 918-1579

From: Papadopoulos, George
Sent: Wednesday, March 09, 2016 2:36 PM
To: catherine.vakalopoulos@massmail.state.ma.us
Subject: FW: Questions about Pilgrim's Shut-Down

Cathy,

Here's Joe's latest thinking of that re-routing of one of the Outfall 011 discharges around 005.

George Papadopoulos – USEPA

(617) 918-1579

From: Egan, Joseph [<mailto:jegan1@entergy.com>]
Sent: Thursday, December 17, 2015 11:13 AM

To: Papadopoulos, George <papadopoulos.george@epa.gov>
Subject: RE: Questions about Pilgrim's Shut-Down

George,

Monday sounds good. Kelli Dowell and I will be on the call so Michael Curley is most welcome.

Can I suggest 12:30 pm as a start time?

Regarding our plans for the Outfall 011 discharge, we are currently deploying a hose from the Neutralizing Sump to the discharge canal and not sending this flow through storm drain Outfall 005. The output from the make-up demineralizer still flows into storm drain Outfall 005 via a hose. It seems likely that we will continue using this approach rather than installing a modification to replace the underground pipe that connected Outfall 011 to the storm drain (Outfall 005) .

I will revise the flow diagram and forward that to you for discussion.

Thanks,

Joe

From: Papadopoulos, George [<mailto:papadopoulos.george@epa.gov>]
Sent: Wednesday, December 16, 2015 3:56 PM
To: Egan, Joseph
Subject: RE: Questions about Pilgrim's Shut-Down

OK Joe,

Monday looks good. Danielle and I will be on the call. An attorney here, Michael Curley, would also want to be on the call. If that would require you to also have an attorney on your end that would complicate scheduling, we could Michael off the call. Let me know.

Wanted to discuss post-shutdown operations, specifically related to the occasional use of circ pump water and how often and for what purposes. Would you know what will happen to the electrical vaults after shutdown ? Would they be dismantled during decommissioning and until that time, would water still need to be pumped out of them ?

Also wanted to discuss the current daily maximum flow for Outfall 001 of 510 MGD which will likely be changed to 468 MGD, to reflect the design capacity of the 2 circ water pumps and 5 SSW pumps.

I also wanted to get an update on where you were at with the proposal you had mentioned for the Outfall 011 discharge to be re-directed to the discharge canal rather than through Outfall 005.

Thanks Joe

George Papadopoulos – USEPA

(617) 918-1579

From: Egan, Joseph [<mailto:jegan1@entergy.com>]
Sent: Tuesday, December 15, 2015 1:01 PM
To: Papadopoulos, George <papadopoulos.george@epa.gov>
Subject: RE: Questions about Pilgrim's Shut-Down

Thanks George. I don't think this Thursday is viable, but I am looking into Monday, 12/21.

I'll get back to you ASAP.

Joe

From: Papadopoulos, George [<mailto:papadopoulos.george@epa.gov>]
Sent: Tuesday, December 15, 2015 11:08 AM
To: Egan, Joseph
Cc: Gaito, Danielle
Subject: Re: Questions about Pilgrim's Shut-Down

Thanks Joe,

I would be able to schedule a call this Thursday or next Monday the 21st. Otherwise, I would be available most of the week of the 28th. Let me know if any dates match up with your availability.

Cheers !

From: Egan, Joseph <jegan1@entergy.com>
Sent: Tuesday, December 15, 2015 10:42 AM
To: Papadopoulos, George
Cc: Gaito, Danielle
Subject: RE: Questions about Pilgrim's Shut-Down

George,

I can tell you the answer to both these questions is no.

- We will **not** chlorinate the Circ. Water pump(s) that we will use.

- We will **not** conduct any thermal backwashes post-shutdown.

I am still looking into Danielle's question about "if the Circulating Water pumps will be used exclusively for cooling water and, if so, what volume/percentage of the intake"? I think that the Circ. Water pump(s) may be run for more than just cooling water and am trying to obtain more information regarding this subject.

Regarding your point about changing "the flow limit for Outfall 001 to reflect the maximum design flow of 468 MGD" – perhaps we could discuss the various aspects of merging Circ Water flow (2 pumps = 447.84 MGD) and [Salt] Service Water flow (5 pumps = 19.44 MGD) into one outfall.

Did you have a date in mind for possibly arranging a conference call?

Thanks,

Joe

From: Papadopoulos, George [<mailto:papadopoulos.george@epa.gov>]
Sent: Thursday, December 10, 2015 12:03 PM
To: Egan, Joseph
Subject: RE: Questions about Pilgrim's Shut-Down

Hi Joe,

Had a couple of quick questions and I realize you may not know the answer yet and we can probably discuss it during a future meeting to discuss post-shutdown operations:

- Do you expect to need to chlorinate the circ. Pump water that you will occasionally need to use to support post-shutdown operations ?

- Would you still need to conduct any thermal backwashes post-shutdown ?

I expect to change the flow limit for Outfall 001 to reflect the maximum design flow of 468 MGD, which includes the SSW as well , correct ?

Thanks

George Papadopoulos – USEPA

(617) 918-1579

From: Egan, Joseph [<mailto:jegan1@entergy.com>]
Sent: Monday, November 16, 2015 10:58 AM
To: Papadopoulos, George <papadopoulos.george@epa.gov>
Subject: RE: Questions about Pilgrim's Shut-Down

2 pm sounds good. Thanks

From: Papadopoulos, George [<mailto:papadopoulos.george@epa.gov>]
Sent: Monday, November 16, 2015 10:57 AM
To: Egan, Joseph
Subject: RE: Questions about Pilgrim's Shut-Down

Thanks Joe, how about 2:00 ?

George Papadopoulos – USEPA

(617) 918-1579

From: Egan, Joseph [<mailto:jegan1@entergy.com>]
Sent: Monday, November 16, 2015 10:52 AM
To: Papadopoulos, George <papadopoulos.george@epa.gov>
Subject: RE: Questions about Pilgrim's Shut-Down

I'm free this afternoon (till 4 pm), if that works for you. Do you have a preference?

Thanks,

Joe

From: Papadopoulos, George [<mailto:papadopoulos.george@epa.gov>]
Sent: Thursday, November 12, 2015 4:44 PM
To: Egan, Joseph
Subject: RE: Questions about Pilgrim's Shut-Down

Sure thing Joe,

My schedule is pretty open Monday thru Wednesday, except for 10-11 Mon, and 8:30- 10 on Tuesday – thanks

George Papadopoulos – USEPA

(617) 918-1579

From: Egan, Joseph [<mailto:jegan1@entergy.com>]
Sent: Thursday, November 12, 2015 4:29 PM
To: Papadopoulos, George <papadopoulos.george@epa.gov>
Subject: RE: Questions about Pilgrim's Shut-Down

George,

Let's try to have a call next week (sooner the better). My schedule is somewhat uncertain at the moment but I'll be in touch ASAP to set something up.

Thanks,

Joe

work 508-830-8915

home 781-749-1150

From: Papadopoulos, George [<mailto:papadopoulos.george@epa.gov>]
Sent: Thursday, November 12, 2015 2:59 PM
To: Egan, Joseph
Subject: RE: Questions about Pilgrim's Shut-Down

Hi Joe,

Let me know if you have time for a call in the next week or two to discuss pre and post-shutdown operations as you described in your e-mail.

Thanks

George Papadopoulos – USEPA

(617) 918-1579

From: Egan, Joseph [<mailto:jegan1@entergy.com>]
Sent: Wednesday, October 28, 2015 12:43 PM
To: Papadopoulos, George <papadopoulos.george@epa.gov>
Cc: David.ferris@state.ma.us
Subject: RE: Questions about Pilgrim's Shut-Down

George,

Here is an initial attempt to address your questions. We can follow up by phone to discuss further.

Will there be a period that the SSW will have to keep operating for cooling purposes and would this be close to the 19+ MGD currently permitted or would it only require operating 1 or 2 pumps ?

The plant will need to maintain continuous SSW (Salt Service Water) flow for at least as long as the spent fuel pool is in operation; expected to be approximately 5 years post-shutdown. This would mean we might use up to 4 SSW pumps (= 15.6 MGD).

What flows will be remaining once the main condenser cooling water flow has been terminated ?

Here is a brief list of remaining flows expected following the final reactor shutdown:

Outfall 001 – One or both main Circ. Water pumps will need to be run for occasion periods to support shutdown operations. However, this is not expected to be more than 5% of the time. The expected temperature differential, if any, should be less than 3 degrees F.

Outfall 002 – While there will be no thermal backwashes, it is possible that some regular (unheated) backwashes of the Circ. Water system will be necessary.

Outfall 003 – Some amount of traveling screen operation is expected to be needed post-shutdown (for as long as the SSW system is in operation). Therefore, screenwash water will be discharged from the sluiceways. Outfall 012 [new label, sluiceway to the discharge canal] would probably become the default flow path.

Outfall 010 – In order to comply with the station's operating license, Salt Service Water flow will need to be available on a continuous basis for as long as there is nuclear fuel in the spent fuel pool (approximately 5 years post-shutdown). It should be noted that chlorination of the SSW system will still be necessary, as a requirement of NRC generic letter 89-13.

Outfall 011 – see below.

Other – Batch releases of process and waste water will continue to be necessary post-shutdown. These are expected to be similar to those discharged over the past several years.

Would there be any miscellaneous flows associated with Outfall 011 after the shutdown ?

Yes, in addition to "reject" water from the make-up demineralizer system, there would still be miscellaneous flows associated with Outfall 011 for the foreseeable future. These would include discharges from the neutralizing sump as well as the heating system and other sources listed in the permit.

Although the stormwater outfalls will remain, will there still be a need to pump out the electrical vaults as they fill with water ?

Yes, many of the same manholes would still need to be dewatered.

Will Pilgrim be sending EPA a separate correspondence for NPDES purposes regarding the shutdown and any specific operational changes leading up to and beyond the shutdown that you would want us to factor into our permit ?

At this time, we will not be sending separate correspondence regarding specific operational changes due to shutdown. Pilgrim will not know until mid-2016 the exact date it will cease operations. It also is too early in the process to know all the specific operational changes and we want to be careful not to overlook something. The shutdown announcement does make it clear that the remaining useful life of the facility is less than the useful life of any 316(b) technology and thus we would request that no additional BTA is required for Pilgrim station.

I suggest we schedule a conference call to discuss Pilgrim's future operations in relation to our NPDES permit. It should be helpful for both of us.

Thanks,

Joe

508-830-8915

From: Papadopoulos, George [<mailto:papadopoulos.george@epa.gov>]
Sent: Wednesday, October 21, 2015 9:08 AM
To: Egan, Joseph
Subject: RE: Pilgrim's DMR for September 2015

Sure thing Joe, I know you have a lot more things to deal with, but let me know when you can – thanks

George Papadopoulos – USEPA

(617) 918-1579

From: Egan, Joseph [<mailto:jegan1@entergy.com>]
Sent: Tuesday, October 20, 2015 4:44 PM
To: Papadopoulos, George <papadopoulos.george@epa.gov>
Subject: RE: Pilgrim's DMR for September 2015

George,

These are good questions to which I don't yet have answers. I assume there's not much point in setting up a time to discuss things until I know more. Can you give me until next week to try and get some input from those that might know?

I'll be in touch in a week to update you on what I've found out. If something is more urgent please let me know.

Thanks,

Joe

From: Papadopoulos, George [<mailto:papadopoulos.george@epa.gov>]
Sent: Monday, October 19, 2015 3:42 PM
To: Egan, Joseph
Subject: RE: Pilgrim's DMR for September 2015

Thanks Joe-

Regarding your facility's recent announcement of a planned shutdown in 2019, do you have a sense as to what flows will be remaining once the main condenser cooling water flow has been terminated? I ask that because the time frame for the shutdown will occur during the next permit life, so we have to account for changes in flows for the period beyond the shutdown. Questions that come to mind include:

Will there be a period that the SSW will have to keep operating for cooling purposes and would this be close to the 19+ MGD currently permitted or would it only require operating 1 or 2 pumps ?

Would there be any miscellaneous flows associated with Outfall 011 after the shutdown ?

Although the stormwater outfalls will remain, will there still be a need to pump out the electrical vaults as they fill with water ?

Will Pilgrim be sending EPA a separate correspondence for NPDES purposes regarding the shutdown and any specific operational changes leading up to and beyond the shutdown that you would want us to factor into our permit ?

Please get back to me when you can to discuss - thank you

George Papadopoulos – USEPA

(617) 918-1579

From: Egan, Joseph [<mailto:jegan1@entergy.com>]
Sent: Monday, October 19, 2015 3:16 PM
To: Papadopoulos, George <papadopoulos.george@epa.gov>; David.ferris@state.ma.us
Subject: Pilgrim's DMR for September 2015

George, Dave –

Attached for your records is Pilgrim's NPDES Discharge Monitoring Report (DMR) for September 2015.

Please contact me if there are any questions.

Thanks,

Joe

J.W. Egan **508.830.8915**

Environmental Specialist

Chemistry Dept.

Entergy Nuclear — PILGRIM STATION